der) and the firing battery trail party (under the senior firing battery first sergeant).

The combat trains consisted of the battalion combat trains command post, ammunition platoon, battalion maintenance, POL section, TACFIRE vehicles, and the battalion aid station. It traveled approximately one kilometer behind the battalion TOC, although the tracked combat vehicles, with their superior off-road mobility, often outran it during sustained operations.

The firing battery trail party, consisting of the firing battery supply and tool trucks, traveled about one kilometer to the left of the combat trains. Trailing everybody was the battalion XO, with the battalion mortar officer and the forward support battalion maintenance contact team.

The XO, by consolidating the CSS assets—most of which used two-and-one-half-ton and five-ton trucks and HEMTTs (heavy expanded-mobility tactical trucks)—was able to spend his time conducting logistics operations instead of tracking down lost or disabled trucks. Heavy wheeled vehicles just could not keep up with the tracked vehicles during off-road desert movements. We accepted that from the beginning and decided that it was better to keep them in a group with communications and navigation aids.

Another advantage our battalion wedge formation offered for CSS operations was that the standard layout of the formation, and the limited distances involved, eliminated any problems with navigation. Since the combat trains and the firing batteries could normally see each other, we could send fuel and ammunition HEMTTs back and forth between the batteries and the trains, without having to devote leaders and navigation aids to the task and worrying that they might get lost. Conversely, the firing batteries could easily find the battalion aid station if they had casualties to evacuate.

The battalion wedge formation also eased maintenance and recovery operations. From this vantage point, the battalion XO and battalion motor officer could see most (if not all) of the vehicles that broke down. This, coupled with the fact that they retained control over most of the battalion's maintenance and recovery assets, allowed them to "police up the battlefield" quickly and effectively.

As useful as we found the centralized approach to CSS operations, it sometimes made more sense to decentralize it to some extent. This was particularly true during exploitation and pursuit operations; the combat vehicles would leave the trains so far behind that timely resupply could not be expected. In such cases, the combat vehicles would take their CSS with them.

For example, the firing batteries used their organic M332 ammunition trailers to carry five-day Class I basic loads (both rations and potable water). Three or four ammunition HEMTTs would normally accompany the TOC to give the firing batteries ammunition they could get to easily if they needed a quick reload. Occasionally, depending on the tempo of the battle, we would have one or two HEMTTs accompany each firing battery so they could reload as they fired. HEMTTs, with their superior off-road mobility, had no problem keeping up with the tracked vehicles. Our fuel tanker HEMTTs gave us similar flexibility with Class III resupply.

We found that the tactics and techniques we had practiced in Central Europe, Korea, and the United States were not always relevant to mobile armored warfare over the flat, empty deserts of the Arabian peninsula. Consequently, we adapted to the environment and the tactical situation. The result was the battalion's wedge formation and battle drill, which proved their worth in combat.

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Combat Lifesaver Training

LIEUTENANT KYLE C. CAMPBELL

The modern battlefield poses the challenge of continuous casualty treatment and evacuation, and there are too few soldiers in medical military occupational specialties (MOSs) in units to provide that care. By doctrine, infantry and other combat arms companies have one medic per platoon and one senior medic at the company aid post or the company casualty collection point. A combat arms battalion has an organic medical platoon consisting of 24 to 32 medics.

Realizing these limitations, the U.S. Army Academy of Health Sciences

developed the Combat Lifesaver Course as part of its continuing effort to provide health service support to forces operating on the AirLand Battlefield. Combat lifesavers, if they are used properly, will greatly increase both the quality and the promptness of treatment given to both battlefield and non-battlefield casualties.

Combat lifesaver training forms a bridge between the self-aid and buddy-aid training given to all soldiers during their basic training and the training given to medical specialists (MOS 91A).

A combat lifesaver is a non-medical soldier who has been trained to provide emergency care as a secondary mission. He provides care to the members of his squad, team, or crew as his combat mission permits. When there is a combat mission to perform, the combat lifesaver helps the medic provide care to injured soldiers and evacuates casualties.

Since many units conduct multiple squad-sized missions, combat lifesavers may provide initial triage and emergency medical care while the platoon medic is enroute. It was in this situation that the 4th Battalion, 9th Infantry, designed its combat lifesaver course and sustainment training.

As the medical platoon leader, I had a number of objectives to accomplish as the training outline began to develop: Provide quality training for the soldiers in non-medical MOSs; make the best possible use of our training resources and training areas; and provide challenging and realistic training.

With these objectives in mind, I then identified the major training support requirements—obtain combat lifesaver course manuals for the students and the instructor; have enough Class VIII medical supplies on hand to support the training; request enough supplies in Classes I, IV, and V to support the four phases of training; and schedule training areas and equipment for instructor rehearsals and the actual course instruction.

In Phase I of the course, 64 soldiers were enrolled as a group in the ISO824 and ISO825 combat lifesaver correspondence course program. Upon completion of this course, each soldier had earned 40 hours of correspondence course credit and eight promotion points. This first phase consisted of classroom instruction covering medical self-aid and buddy-aid tasks.

Phase II consisted of two written tests and hands-on testing of the Phase I tasks. To graduate, a student had to pass each written examination with a score of 75 percent or better and receive a "go" on all hands-on tests.

Phase III consisted of the following:

- Basic communication tasks (operate an FM radio (AN/PRC-77); enter a radio net and authenticate; send a radio message, including a nine-line medical evacuation request; and operate a field telephone).
- A land navigation course.
- Water obstacle and survival training, construction of a rope bridge and poncho rafts.
- Evacuation of casualties; one-man and two-man carries; construction of improvised litters; loading and unloading a front-line ambulance, a two-and-one-half-ton cargo truck, and a medical evacuation (MEDEVAC) helicopter.
- Basic pathfinder and air assault techniques, including the establishment of landing and pickup zones, arm and hand signals, and calling in helicopters.

In Phase IV each soldier was required to negotiate a trauma lane under simulated battlefield conditions. The students were given a scenario that included three to five casualties, each of whom had any two of the following injuries: head wound, chest wound, fractured limb, abdominal wound, sucking chest wound, amputation, hypovolemic shock, and requiring an intravenous infusion.

The students were also required to conduct triage and treat the casualties within 30 to 45 minutes, depending upon the number and type of casualties they were treating. Each student was evaluated by medics who had been selected after going through similar casualty trauma lanes as part of earning their Expert Field Medical Badges.

The battalion's combat lifesaver sustainment program includes annual medical modules such as general subjects, airway management, application of special dressings, splints, and fractures, intravenous therapy, environmental injuries, chemical agent casualties, and transportation of the sick and wounded.

In addition to these required modules, we have incorporated a number of additional tasks including evacuation of casualties using wheeled and tracked vehicles and aircraft, triage and treatment of multiple casualties and injuries, casualty treatment and evacuation in an urban environment, evacuation of casualties over a litter obstacle course (high wall, low wall, uphill, downhill, wire, and trench), and a high angle evacuation confidence course.

Any soldier can be a combat lifesaver, regardless of his MOS, but I recommend that personnel who are not mission essential be selected. This frees leaders and operators of critical weapons to continue the mission. In combat service support units, equipment and vehicle operators and track commanders, as well as personnel in each section, should be selected as combat lifesavers.

The quality of combat lifesaver instruction depends upon the realism of the training, the knowledge of the instructors, the supplies and equipment available, and the desire of the soldiers. Our course was designed and presented with great enthusiasm. The battalion trained 64 soldiers, with 56 graduating, and currently has 94 combat lifesavers, with at least two per squad or section or six to eight per platoon.

With a limited number of medical personnel, the addition of combat lifesavers to the battlefield helps units fill the void. The Health Services Command continues to review medical support doctrine, capabilities, and training to maintain its commitment "to conserve the fighting strength."

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